

CLAIMS

What is claimed is:

1. A computer-enabled workflow process system, comprising:
a node group database that stores a group of work nodes referred to by a generic node, wherein a work node defines a workflow action and data items to be read and written when executing the workflow action;
a workflow engine that executes a workflow process having the generic node, wherein the workflow engine accesses the node group database for the group of work nodes when the generic node is to be executed so as to allow dynamic composition and modification of the workflow process.
2. The system of claim 1, wherein work nodes can be added to or removed from the node group dynamically without requiring the workflow process to be redefined.
3. The system of claim 1, wherein the node group database stores a plurality of groups of work nodes, each being referred to by at least one generic node.
4. The system of claim 3, wherein each generic node can refer to more than one group of work nodes.
5. The system of claim 1, wherein the workflow engine further comprises

a static instance manager that manages execution of work nodes within the workflow process;

an adaptive instance manager that accesses the node group database for the group of work nodes to replace the generic node.

6. The system of claim 5, wherein the adaptive instance manager receives attributes of the generic node to determine which work nodes within the group are to replace the generic node.

7. The system of claim 5, wherein the adaptive instance manager further comprises

a first set of instructions that receive attributes of the generic node from the group of work nodes;

a second set of instructions that determine which work nodes within the group are described by the generic node;

a third set of instructions that replace the generic node with all of the work nodes within the group that are described by the generic node.

8. In a workflow process management system, a computer-implemented method of executing a workflow process having at least a generic node, comprising

storing a group of work nodes corresponding to the generic node in a node group database, wherein the node group database stores a plurality of groups of work nodes, wherein a work node defining a workflow action and data items to be read and written when executing the workflow action;

accessing the node group database for the group of work nodes when the generic node is to be executed;

executing work nodes in the group such that the workflow process can be dynamically composed and modified without requiring that the workflow process be redefined.

9. The method of claim 8, wherein work nodes can be added to or removed from the group without redefining its corresponding workflow process.

10. The method of claim 8, further comprising the step of determining when the generic node in the workflow process is to be executed.

11. In a workflow process management system, a computer-implemented method of compiling a workflow process having a plurality of nodes, comprising

- (A) determining if a node is a generic node;
- (B) compiling the generic node if the node is a generic node;
- (C) if the node is a work node, compiling the work node;
- (D) repeating the steps (A) through (C) if more nodes in the workflow process need to be compiled.

12. The method of claim 11, wherein the step (B) further comprises the step of checking correctness of the generic node while compiling to avoid run-time errors.

13. The method of claim 12, wherein the step (B) further comprises the steps of

retrieving attributes of the generic node;
retrieving from the node group database a definition of the group;
causing the compilation of the generic node to be proceeded if data items from the group are a subset of data items of the workflow process.

14. The method of claim 11, wherein the step (C) further comprises the step of checking correctness of the work node while compiling.